

**REPORT
SOIL VAPOR SURVEY
SUBSURFACE SOIL SAMPLING AND
GROUNDWATER SAMPLING
TECHNI-BRAZE, INC.
11845 BURKE STREET
SANTA FE SPRINGS, CALIFORNIA**

Project 50-2614-01

02 APR 27 PM 12:47
LOS ANGELES REGION
QUALITY CONTROL
STATION

October 1991

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SUMMARY

Techni-Braze, Inc. (TBI), was a party to a business acquisition agreement which was to have closed early in September 1991. During the "due diligence" period under the contract, the buyer engaged an environmental consultant to perform certain environmental site assessment tests at the TBI facility in Santa Fe Springs. The preliminary site investigations indicated that soil and groundwater were contaminated with halogenated volatile organic compounds (HVOCs).

In September 1991, Kleinfelder was retained by Stone & Doyle to conduct groundwater sampling, a soil vapor survey, and subsurface soil sampling for TBI, located at 11845 Burke Street, Santa Fe Springs, California. The field activities of this work was initiated during September 1991 and completed in early October 1991.

A soil vapor survey was conducted to provide data for use in assessments of potential locations where HVOCs may have been released into the site soils. A survey grid was established and a total of 29 soil vapor samples were collected and analyzed onsite. The samples were analyzed for HVOCs and volatile aromatic organic compounds (VOCs) using United States Environmental Protection Agency (U.S. EPA) Methods 8010 and 8020, combined. Analytical results indicated that tetrachloroethylene (PCE) was detected at all sample locations. Concentrations of PCE detected ranged from 0.02 ppm (V15) to 1,080 ppm (V28). Analytical laboratory results indicated that PCE was detected at much higher concentrations surrounding the former parts degreaser area and the existing aboveground PCE storage tank area than the rest of the site.

Four soil borings were drilled to depths of 20 feet below grade in the proximity of the former parts degreaser area and the existing aboveground PCE storage tank area (northwest corner of the existing building). Twenty-eight soil samples (seven samples from each boring) were collected and analyzed for HVOCs using U.S. EPA Methods 8010 and 8020 combined.



Analytical laboratory results indicated that PCE was detected in all soil samples except two. PCE was present in soil boring B3 (close to the former parts degreaser), ranging from 3.770 milligrams per kilogram (mg/kg) at 1 foot below grade to 6.910 mg/kg at 20 feet below grade. PCE was also present in soil boring B4 (under the former parts degreaser), ranging from 26.570 mg/kg at 1 foot below grade to 3.760 mg/kg at 20 feet below grade. PCE was detected in soil boring B5 (close to the aboveground PCE tank), ranging from 60.620 mg/kg at 1 foot below grade to 0.850 mg/kg at 20 feet below grade. PCE was also detected in soil boring B6, ranging from 1.400 mg/kg at 1 foot below grade to 3.050 mg/kg at 20 feet below grade.

The detected concentrations of PCE in soil borings B3, B4, and B5 exceed the State of California, Department of Health Services, Site Mitigation Decision Tree, Recommended Soil Clean-up Level Guideline of 5 mg/kg.

Groundwater samples were collected and analyzed for halogenated volatile organic compounds using U.S. EPA Method 601. Analytical laboratory results indicated PCE was detected in all groundwater samples at concentrations ranging from 62 $\mu\text{g/l}$ to 5,800 $\mu\text{g/l}$. The detected PCE concentrations exceed the Maximum Contaminant Level (MCL) indicated in the California Code of Regulations, Title 22, §64444.5 for PCE in drinking water of 5 $\mu\text{g/l}$.

Data collected during this assessment indicated that there were potentially two PCE release points: 1) from the former degreaser; and, 2) from the aboveground PCE tank. The possible source of PCE, the degreaser, had been removed from the property prior to this investigation. It is recommended that a secondary containment be constructed surrounding the aboveground PCE tank to minimize the potential for future release.



Drilling one additional soil boring close to soil boring B3 in the furnace area to a depth of 30 feet below ground surface is recommended in order to further assess the vertical extent of the PCE contamination. Preliminary data indicate that an area of approximately 30 feet wide and 60 feet long and 30 feet deep under the northeast corner of the building is potentially contaminated with PCE. Due to the location of the contaminated soils, it is thought that the costs and logistics excavation and disposal of these soils would be prohibitive. Additionally, excavation could pose a threat to the structural integrity of the northwest corner of the building necessitating the use of shoring. Therefore, it is recommended that soil borings B3 and B4 be redrilled to depths of 30 feet below ground surface, and that an additional soil boring be drilled in line with soil borings B3 and B4. These soil borings should be converted to soil vapor extraction wells and used for a soil vapor extraction test. A soil vapor extraction test should be conducted to assess the potential of using a soil vapor extraction system to remediate the HVOC contaminated soil at this location. A groundwater elevation survey for existing monitoring wells should be performed in order to estimate the groundwater flow direction. Upon completion of the groundwater elevation survey, an additional groundwater assessment, including installing two offsite groundwater monitoring wells (one hydrogeologically upgradient and one hydrogeologically downgradient) and one onsite groundwater monitoring well in the former machine shop area, are also recommended.

This summary is subject to the limitations stated in this report.

1. Debrine all plumes
2. VE Pilot Test OK!
3. Yes
4. Yes



Laboratory analyses of the soil sample collected from soil boring B-2 at the 0.5- to 2-foot depth interval below grade surface indicated that a concentration of 92,000 $\mu\text{g}/\text{kg}$ of PCE was present in the soil sample. Other HVOCs were not detected. Laboratory analyses of B-2 SS-4 (10 to 12 feet below grade) and B-2 SS-7 (25 to 27 feet below grade) indicated that HVOCs were not exceeding the Method detection limit.

Groundwater Monitoring Wells

MCA installed four groundwater monitoring wells (MCA-1, MCA-2, MCA-3, and MCA-4) at TBI during August 1991. The MCA groundwater monitoring well locations are shown in Figure 4 - Existing Groundwater Monitoring Well Locations Map.

Groundwater Monitoring wells MCA-1, MCA-2, MCA-3, and MCA-4 were installed at depths of 60 feet, 40 feet, 40 feet, and 45 feet below grade, respectively. All four monitoring wells were constructed with 2-inch inside diameter, 0.010-inch slotted screen, Schedule 40 PVC. A groundwater well elevation survey was not performed.

A groundwater sample was collected from each of the four monitoring wells during August 1991. The groundwater samples were analyzed for halogenated and aromatic volatile organic compounds using U.S. EPA Method 8240. The analytical results of those groundwater samples are shown on Table 1. Laboratory analyses of groundwater samples from monitoring well MCA-1 indicated that a concentration of 2,200 $\mu\text{g}/\text{l}$ of PCE and 100 $\mu\text{g}/\text{l}$ of TCE results of the groundwater sample from MCA-2 indicated 27 $\mu\text{g}/\text{l}$ of PCE; MCA-3 indicated 1,300 $\mu\text{g}/\text{l}$ of PCE, 12 $\mu\text{g}/\text{l}$ of TCE, 14 $\mu\text{g}/\text{l}$ of 1,1,1-TCA, and 22 $\mu\text{g}/\text{l}$ of 1,1-DCE; and MCA-4 indicated 7,400 $\mu\text{g}/\text{l}$ of PCE, 13 $\mu\text{g}/\text{l}$ of TCE, 17 $\mu\text{g}/\text{l}$ of 1,1,1-TCA, and 28 $\mu\text{g}/\text{l}$ of 1,1-DCE.



GROUNDWATER SAMPLES

Groundwater samples were analyzed for halogenated volatile organic compounds using U.S. EPA Method 601 (refer to Appendix J and Table 4). 1,2-Dichloroethane was detected in a water sample from MCA-2 at concentration of 2 $\mu\text{g/l}$. TCE was detected in a water sample from MCA-1 and MCA-3 at concentrations of 100 $\mu\text{g/l}$ and 10 $\mu\text{g/l}$, respectively. PCE was detected in water samples from four wells at concentrations ranging from 62 $\mu\text{g/l}$ (MCA-2) to 5,800 $\mu\text{g/l}$ (MCA-4).

As indicated in last section (Soil Samples), the MCL in drinking water for PCE according to Title 22, §64444.5 is 0.005 mg/l (5 $\mu\text{g/l}$).



Sample Location	Depth Interval (ft)	Medium	TPH (ppm)	TETRA (ppb)	TCE (ppb)	1,1,1-TCA (ppb)	1,1-DCE (ppb)
MCA-1	NA	Groundwater	LT 0.5	2200	100	ND	ND
MCA-2	NA	Groundwater	LT 0.5	27	ND	ND	ND
MCA-3	NA	Groundwater	LT 0.5	1300	12	14	22
MCA-4	NA	Groundwater	LT 0.5	7400	13	17	28
B-1 SS-1	0.5-2.5	Soil	59	200	ND	ND	ND
B-1 SS-4	12-14	Soil	NA	ND	ND	ND	ND
B-1 SS-6	25-27	Soil	ND	ND	ND	ND	ND
B-2 SS-1	0.5-2	Soil	4700	92000	ND	ND	ND
B-2 SS-4	10-12	Soil	NA	ND	ND	ND	ND
B-2 SS-7	25-27	Soil	ND	ND	ND	ND	ND

NOTES:
 TPH = Total Petroleum Hydrocarbon Analysis by EPA Method 418.1.
 ppm = parts per million, equivalent to milligrams per liter (mg/L).
 ppb = parts per billion, equivalent to micrograms per liter (ug/L).
 TETRA = Tetrachloroethene.
 TCE = Trichloroethene.
 1,1,1-TCA = 1,1,1-Trichloroethane.
 1,1-DCE = 1,1-Dichloroethene.
 B = Test Boring.
 MCA-# = Monitoring Well Location.
 NA = Not Applicable or Not Analyzed.
 ND = Not Detected

 LT = Less Than.

TABLE 4
 LABORATORY ANALYTICAL DATA SUMMARY
 GROUNDWATER SAMPLES
 U.S. EPA METHOD 601
 TECHNI-BRAZE, INC.
 Santa Fe Springs, California
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(Data in micrograms per kilogram - $\mu\text{g/l}$)

Well Number	1,2-Dichloroethane	Tetrachloroethylene	Trichloroethylene
MCA-1	ND	2,700 ✓	100
MCA-2	2	62	ND
MCA-3	ND	780	10
MCA-4	ND	5,800 ✓	ND
Trip Blank	ND	0.7	ND

NOTES:

Detection limits based on dilution factor of the sample.

0.5 $\mu\text{g/l}$ for 1,2-Dichloroethane

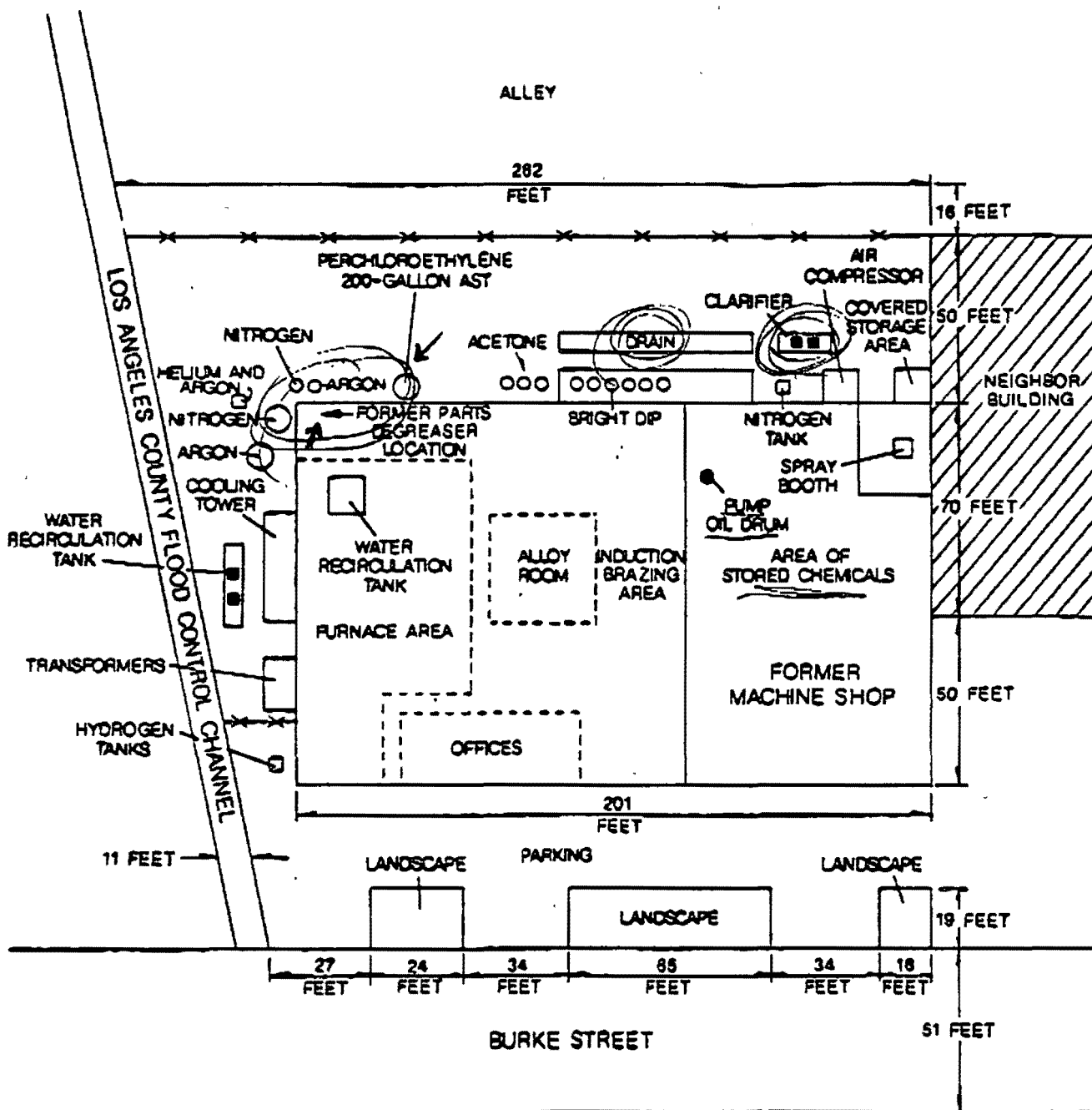
0.5 to 25 $\mu\text{g/l}$ for tetrachloroethylene

0.5 to 25 $\mu\text{g/l}$ for trichloroethylene

Refer to the laboratory report (Appendix J) for details.

ND = not detected at designated detection limit.





EXPLANATION

- ABOVEGROUND STORAGE TANK
- X— FENCE



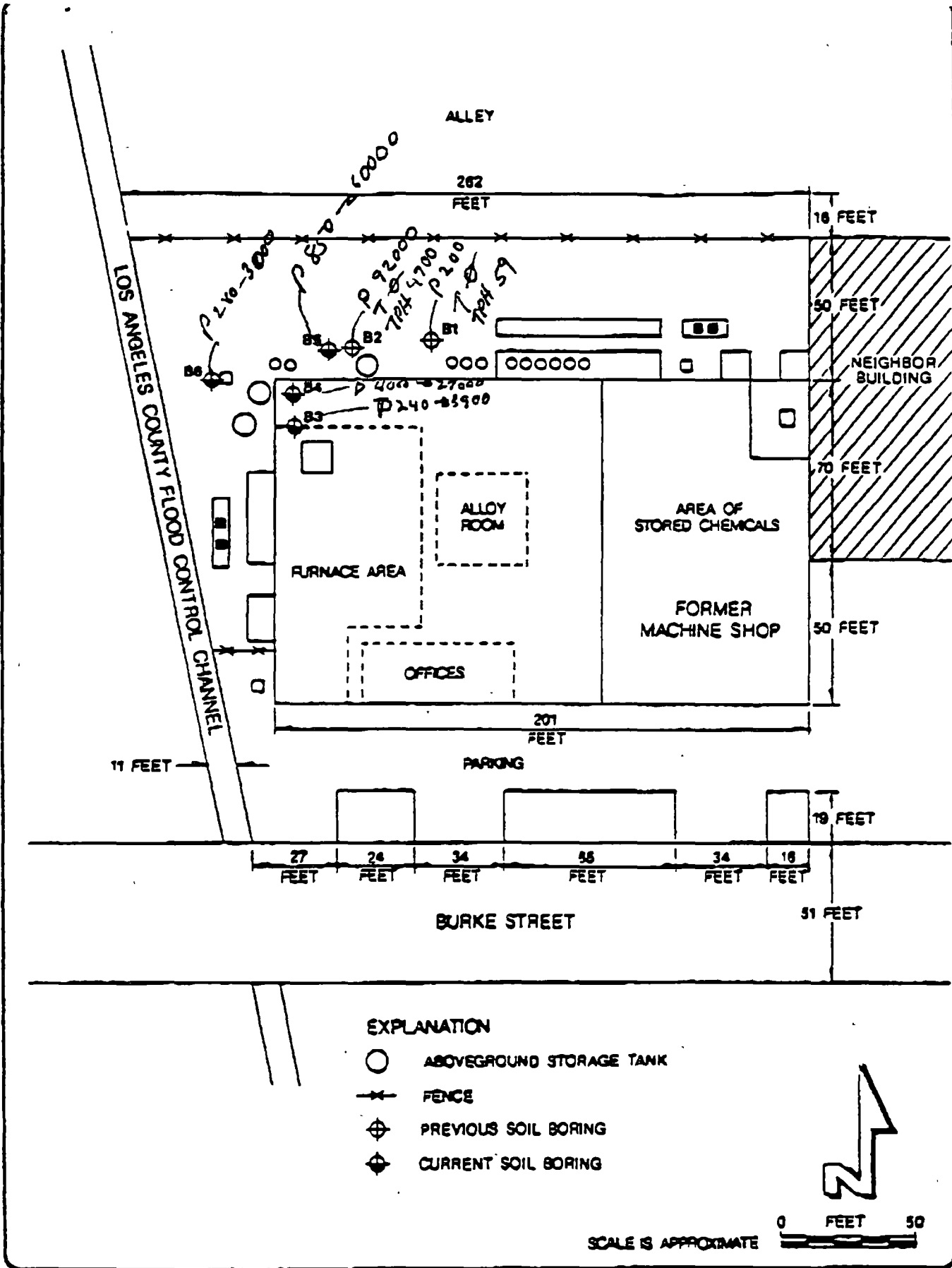
SCALE IS APPROXIMATE



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SITE MAP

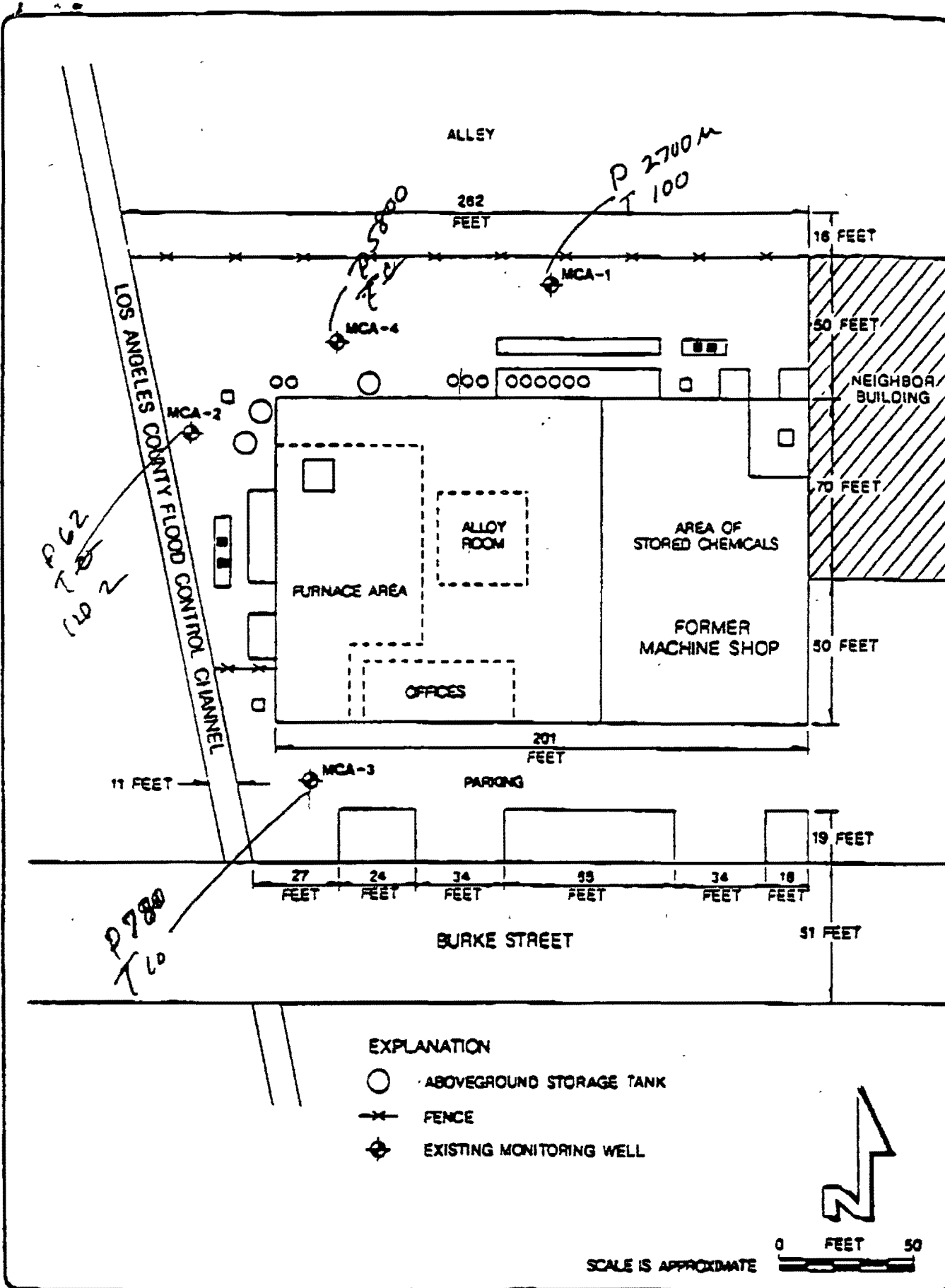
FIGURE
2



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**PREVIOUS AND CURRENT
 SOIL BORING LOCATIONS MAP**

**FIGURE
 3**



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EXISTING GROUNDWATER MONITORING WELL LOCATIONS MAP

FIGURE

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